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What Should I Do In An A-Bomb Attack?

A radio discussion over WGN and the Mutual Broadcasting System

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What Should I Do In An A-Bomb Attack?

DEAN JAMES H. MCBURNEY: Our speakers today are Dr. Earl H. Blair, Chairman of the Committee on Emergency Medical and Surgical Services with the Chicago Civil Defense, and the Chicago and Illinois State Medical Societies; Victor C. P. Dreiske, Vice-President of the J. Walter Thompson Company and Co-Director of Chicago Civil Defense; Dr. Andrew C. Ivy, Vice-President of the University of Illinois and First Vice-Chief of the Emergency Medical and Public Health Services with the Chicago Civil Defense; and Colonel Charles T. Tench, Engineer with the 5th Army, and a man who has seen the damage of the A-bomb at Hiroshima.

Need for Concern?

Now I should like to open this discussion, gentlemen, by asking whether there is any real reason why we should be concerned about an A-bomb attack? How do you see that, Colonel Tench?

COLONEL TENCH: A year ago, almost to the day, the President of the United States announced that the USSR had succeeded in producing an atomic explosion. It would be mere wishful thinking, therefore, to make any assumption except that the A-bomb is possessed by powers other than ourselves and our allies.

MR. MCBURNEY: Do these powers have the means, Colonel, of delivering such an attack on us?

COLONEL TENCH: It is known other powers possess B-29 type aircraft. Operating from their own territory, such aircraft are capable of flying one-way missions against any target in the continental United States. While many would be intercepted and shot down, it is impossible to guarantee 100 per cent interception, particularly at the outset of hostilities.

DR. IVY: Colonel, I believe it is stupid to underrate the potential capabilities of a potential enemy. It seems to me that we must be prepared for any sort of an attack by a potential enemy.

COLONEL TENCH: We have a military expression for that, Dr. Ivy. We say that we must always base our planning on the other fellow's capabilities rather than on his intentions.

Use of Radar

MR. MCBURNEY: If these bombs are delivered by aircraft, Colonel, can you set up a radar screen of some sort that will give us warning at least, even though we can't intercept them?

COLONEL TENCH: Yes, we can expect a warning, but radar cannot guarantee 100 per cent interception any more than fighter planes can guarantee 100 per cent interception.

DR. IVY: Don't we know that to be a fact from our World War II experience? We had radar screens over in Europe.

COLONEL TENCH: A determined attack always got through, at least to some degree.

MR. MCBURNEY: If these bombs were to be sent our way would they necessarily come by aircraft, Dr. Ivy?

DR. IVY: They could come in by guided missiles. I would like to hear what the Colonel has to say about that.

COLONEL TENCH: Intercontinental guided missiles carrying atomic bombs, I would not say are an immediate danger. However, seacoast cities must consider the possibility of guided missiles launched by enemy submarines.

DR. IVY: Isn't it possible that some of our enemies may have a guided missile

that we don't know anything about now?

COLONEL TENCH: That is always a possibility, Dr. Ivy.

DR. BLAIR: It should be pointed out, too, that these guided missiles might drop on rural or suburban areas. The same might happen with bombs brought in by aircraft.

MR. MCBURNEY: Could these A-bombs be brought in by saboteurs?

MR. DREISKE: Yes, indeed, we not only have to fear the fact that they would be brought in by airplanes, but they could easily be delivered by freight or brought in on vessels and ships that might touch our shores and that sort of thing. They also could be assembled here. An A-bomb could be delivered in pieces by express or in trucks or could be brought in almost any way and could be assembled and placed in some area with a timing device that would explode the bomb any time within six months.

Sabotage

MR. MCBURNEY: Do you think that possibility of sabotage is a real factor to be reckoned with?

MR. DREISKE: I think it is as real and as important to reckon with as the dropping of an A-bomb by an airplane. I think it is part of the plan.

DR. IVY: Mr. McBurney, I should like to say that Dr. Bundeson*, Dr. Blair and I were discussing that possibility just this last week in reference to a mobile and radio detecting unit that has been made available. If saboteurs were to bring in radio-active materials and put them down in a deep cellar, a detecting apparatus could travel around on the street and couldn't detect them. So we have to be constantly alert against sabotage from that particular source.

MR. MCBURNEY: Now I don't mind saying, gentlemen, that in terms of our preliminary discussions of this subject, and in terms of what you are saying now and propose to say, all of this presents a pretty grim picture. And the question that naturally comes to my mind as a layman is simply this: Why haven't we done something about it if this danger is as real as you men seem to think it is? What would you say to that, Dr. Blair?

DR. BLAIR: For the past three years the American Medical Association and the Illinois State Medical Society have been very much aware of this problem and have done something about it. Upon the explosion of the first atomic bomb the medical profession, individually and collectively, saw the potential job they had to do in case this energy were employed in a warlike manner, and began to make plans to alleviate medically.

DR. IVY: Yes, Mr. McBurney, the doctors and scientists and many people in the military have been fully cognizant of the potential dangers to us from the use of atomic power as a weapon of warfare, but it has been difficult for us to interest lay people in this possibility. And I think that is based upon a fundamental psychological trait of human beings: they don't like to think about the unpleasant or to prepare to prevent the unpleasant from occurring. You know if you have ever been with a group of soldiers getting ready for combat or getting ready for going over the top, it is always the other soldier that is going to be wounded, that is going to be a casualty, and it is not yourself. That represents the natural human tendency to try to avoid thinking about the unpleasant. But here is a situation where we have to work and hope for the best but be prepared for the worst!

'Destructive Power'

MR. MCBURNEY: Do you think this A-bomb is as destructive a weapon as the people generally have been led to believe, Dr. Blair?

DR. BLAIR: No, I don't believe so. This is a new weapon in warfare and naturally a bit of leftist thinking or overemphasis on its destructiveness and the large masses of casualties has followed. We now know that the A-

*Dr. H. N. Bundeson is Deputy Director of Medical Services, Chicago Civil Defense.

bomb is not as destructive a weapon as we have been led to believe in many quarters.

MR. MCBURNEY: Just how destructive is it, anyway?

DR. IVY: I agree with Dr. Blair that in some articles that have been published in magazines, the destructiveness has been overrated. For example, the objective of the emergency medical service and public health group of the Chicago Civil Defense organization has been to set up as a definite objective the prevention of deaths among casualties to the extent of 75 per cent. I have the cold figures and facts to demonstrate that if we organize the medical services properly, and if the people of Chicago will cooperate, that we can reduce deaths among the casualties by 75 per cent. So a great deal can be done about this.

COLONEL TENCH: Having seen Hiroshima I have a terrific respect for the destructiveness of the atomic bomb, but I must make the point, as you have, Dr. Ivy, that had Hiroshima been prepared a great many of the casualties there might have been saved.

Simulated Attack

MR. MCBURNEY: Our listeners may or may not know about this simulated atom bomb attack on Chicago. Had these three imaginary bombs been dropped on Chicago, what would have been the measure of the casualties and the type of damage done?

MR. DREISKE: We have a great many figures here because when the problem was given to us by the National Resources Security Board they listed the number of casualties we might expect in the dropping of the bombs on the three different locations. We were also given a list of the amount of physical damage that would be done, that is the number of stores and buildings which would be damaged, and what other destruction might take place. And then, of course, we set out to protect ourselves. Next week we will start telling people what we did as a result of those bombs.

To try to give you actual figures at this time regarding the extent of the physical damage would be rather difficult to do. It takes a long list of figures which I have here, but perhaps Dr. Blair has the number of casualties.

MR. MCBURNEY: How many casualties would have been involved in that kind of attack, Dr. Blair?

DR. BLAIR: The two air and one ground burst would have created a total of 214,000 casualties—that includes the dead. The dead would have numbered 71,000. Subsequent deaths during the following six weeks would be approximately 100,000.

MR. MCBURNEY: Are these data given on the assumption that we made proper precautions?

DR. IVY: Yes, exactly, and that is just what I should like to emphasize, that regardless of the enormous number of casualties we can save the lives of 75 per cent of them by the sort of an organization that we have planned to set up here in Chicago, if we can get the people to cooperate with us in this plan through the process of educating them and telling them what to do.

Estimate of Damage

MR. MCBURNEY: Before we go into that plan—and I am interested in it—tell us this: What happens when one of these bombs explodes, Dreiske? What kind of casualties do we get? What kind of damage? What happens?

MR. DREISKE: First of all within an area of about one mile of ground zero, which indicates the exact center. . . .

MR. MCBURNEY: That's where it hits?

MR. DREISKE: Yes, yes, that is the ground point over which the air burst has occurred . . . everything is almost completely destroyed. Beyond that we have varying degrees of destruction largely affected by the type of building—and by that I mean whether it is a concrete building or a stone and steel building or that sort of thing. Windows, of course, are blown out of buildings to as far away as five miles, but there begins the evidence of dis-

sipation of the effect of the bomb.

MR. MCBURNEY: What are the hazards? Can you tell us more about that, Dr. Blair?

DR. BLAIR: When we realize the forces released by the explosion of an atomic bomb we can get a better picture of it. At ground zero there is a wind velocity created by this explosion of 800 miles per hour. At one mile distance from ground zero the wind velocity is 200 miles an hour, and still at two miles distance the wind velocity is about 70 miles per hour or hurricane speed. There is a great deal of heat and blast damage and a great deal of damage from flying glass and flash ignition of tinder-like materials.

The injuries to individuals would be about 85 per cent burns and trauma. Then the remaining 15 per cent would be radiation sicknesses.

'Radiation Sickness'

DR. IVY: Yes, and in this hypothetical, three-bomb attack on Chicago on September 18th there were 35,000 cases of radiation disease produced. Now what can we do about that? This is what we can do: when the individuals who have been exposed to this radiation hazard come out of the bombed area they will be studied to see how much radiation they have been exposed to and then they will be sent to certain refugee centers where a blood count will be made on them every week. Thus, we can check on the early onset of this disease and give them blood transfusions, and in that way save the lives of many of them.

MR. MCBURNEY: Do we have an overall civil defense plan against these emergencies and these tragedies, Dreiske?

MR. DREISKE: In the Chicago area we do have such a plan. Parts of it, like the medical department, have been in the process of development for over two years. They have been concentrating on the development of their plan for the past year.

MR. MCBURNEY: Is this going on all over the country?

MR. DREISKE: No, no, I feel that we are one of the very few cities that is as far advanced in the development of a civil defense plan as we are.

MR. MCBURNEY: Are we far advanced because we think we are a prime target?

MR. DREISKE: Well, first of all, yes, we are a prime target. That is, it is evident, of course, that it would be a pretty nice thing for an enemy to wipe out any part of Chicago with the many resources that it represents. But besides that we were started on this by Mayor Kennelly over a year ago. The present Civil Defense Committee was established a few months ago and he has kept after us to see that we proceeded in the development of the over-all plan which involves, of course, a great many thousands of people—the police department, the fire department, the public services, engineering, communications, and all that sort of thing. And we have reached a splendid state of development today, so much so that I believe we could take a bombing today, right this minute, and do a very creditable job.

Role of Army

MR. MCBURNEY: What is the role of the Army in this kind of a program, Colonel?

COLONEL TENCH: In wartime the primary mission of the military services is to prosecute the war against the enemy and to bring hostilities to a successful conclusion as soon as possible. I think it is advisable to emphasize that our peacetime readiness, of which we are very proud, to lend assistance to civil authorities in disaster relief, cannot be counted upon in wartime because of the necessity to concentrate on our primary mission. But I think, Mr. Dreiske, you might be interested in some of the things the military services can do. We will furnish you guidance as to which areas are most likely to be attacked. We will furnish you information as to anticipated form of attack. We will furnish you decisions on certain specific defense measures, for example, black-out, dim-out, camouflage. We will warn you of an impending attack,

and finally we will render assistance, where possible, in the event of war disasters upon request by proper authority—and again I emphasize *where possible.*

DR. IVY: Colonel, in that regard one of the first things that the medical division did was to ask representatives of the Army and Navy and the United States Public Health Service and Red Cross to meet with us to see whether or not they could help us take care of an atomic, bacterial, or chemical attack on the city of Chicago; and we were told just exactly what you said. For example, the American Red Cross is set up legally to take care of peacetime disasters, the sort of disasters that are characteristic of peacetime. Here is a situation where the people in the community, themselves, have to organize and be prepared to take care of an attack on them by a potential enemy.

In other words, we have to get back to the basic philosophy of the American form of government where the community itself has got to assume a great deal more responsibility than it has in the recent past. We can't expect George to do it. We can't expect Washington to do it. We have got to do it ourselves.

'Job of Community'

MR. DREISKE: That's right. If we are at war we are going to be expecting our military to be prosecuting the war some place else. We can't expect it to take care of the home front. I think Dr. Ivy is exactly right; it is our job, and we have established that understanding and relationship with the military.

MR. MCBURNEY: What kind of mobilization is required on the part of the medical services specifically, Dr. Blair, to take care of a crisis of this sort? How would we handle all these nonfatal casualties to which you were referring a few minutes ago?

DR. BLAIR: I would like to bring the matter of casualties down to the individual in his own home. The medical assistance he has been able to have in the past will not be immediately available. One of the five points in the program of the Chicago and Illinois State Medical Societies and Chicago Hospital Council and the Chicago Civil Defense organization is the matter of *self help.* Someone in every household should take the American National Red Cross First Aid Training Course and become proficient in it in order that he may give assistance to himself, his immediate family, and his neighbor. And if that area in which he lives escapes injury, he would therefore make himself available to the medical personnel in support of their efforts to alleviate sickness and injury in other areas.

MR. MCBURNEY: Are you suggesting that we wouldn't have enough doctors to go around if this thing really were to hit us?

DR. BLAIR: No, I am not saying that at all. We have enough doctors. We have our plan worked out so that we may even have a few to spare.

DR. IVY: Yes, in that particular area the dentists are cooperating with us, the osteopaths, the chiropodists, the veterinarians—everybody who has had any sort of training in taking care of injured people will be mobilized in this plan that we have here in Chicago. It includes the training and mobilization into teams and the indoctrination and drills of 102,000 Chicago citizens.

MR. MCBURNEY: I should think, Dr. Ivy, that panic would be one of your greatest problems if these bombs were to explode over us.

Public Education

DR. IVY: That is point number one in our educational program. We have to educate the people of Chicago and every place to stay put in their houses in the case of an A-bomb attack. There are a number of reasons for that. For example, the streets are going to be blocked by the police because the streets will have to be used by those who are going to save the lives of the 75 per cent of the casualties that are a result of the blast. Then, furthermore everybody knows if they stop and think about it, that

if they rush out in the streets they will block the streets themselves; and furthermore there will be some radioactive dust thrown up and it will take 15 or 20 minutes for that to settle. And if a person would go out in the street without protection, he would inhale a lethal dose. And furthermore, a radioactive mist might be thrown up and he would inhale that. And around 35 or 40 minutes after the blast there occurs a radioactive rain, and people would have to stay in for that reason.

Danger of Rumors

So that is the first principle. Now the second principle is to pay no attention to rumors. As everybody knows who reads the newspapers, one of the tools of the Communists is to create confusion, and they do this by rumors. For example, a mild attack of dysentery or diarrhea can be converted into plague or cholera by rumors, so we can't pay any attention to rumors.

COLONEL TENCH: The purpose of any enemy in delivering an attack of this sort against us, Doctor, would be to destroy or diminish our capacity and our will to resist. Now, if he can bring that effect by panic and mass evacuation just by threatening us with an atomic attack, he can effect his purpose without ever having to drop his bomb on us in the first instance.

MR. DREISKE: Those are some of the very important subjects to be handled by our recently formed Public Information Committee. That committee is preparing to take these memorandums that we have recently received from you, Dr. Ivy, and you, Dr. Blair, and break them down into language that can be understood by people of all ages in our schools as well as parents, telling them what to do. And we hope to create a really intensive plan of education so that people will do the proper things in the event we are attacked.

MR. MCBURNEY: This discussion suggests two questions. First, several references have been made here to bacterial warfare. What does that have to do with an A-bomb attack, Dr. Ivy?

Contagious Disease

DR. IVY: Well, we are always exposed to certain infectious diseases or contagious diseases after any sort of disaster, such as tetanus infection of the wounded cases, or the coming in of typhoid and of smallpox. Then in order to prevent that we have to immunize the people against tetanus and typhoid and smallpox, and that is one of our proposals.

It is true, too, that bacteria can be used for sabotage. But I should like to tell everyone that the Medical Division of the Chicago Civil Defense has already made recommendations which are now being implemented to prevent sabotage on the bacterial front and other fronts.

MR. MCBURNEY: How would that be conducted—through the water system, through food contamination, or what, if it were to be done?

DR. IVY: Yes, those methods, and there are other ways against which we have set up agencies to prevent sabotage.

For example, one is rats. We are going to have to eradicate the rats. They are not only a dangerous menace after an attack, but they are also a dangerous menace in regard to sabotage through disease. We have got to eradicate the rats and flies. I want everyone to know that protection against sabotage in all areas where sabotage might be used is now in process in the city of Chicago.

There is another point in this medical program which I should like to mention and also discuss with Dr. Blair. One of the points in the Five Point program of the Medical Division of the Chicago Civil Defense organization is the establishment of a walking blood bank. For example, in the three-bomb problem which was hypothetically presented to the Civil Defense organization in Chicago by the national office of Civilian Defense a situation was created whereby 800,000 pints of blood would be required within four weeks after the blast to take care of all the casualties. Most of that blood

would be required in the first 48 hours. The only way that the medical group in Chicago can conceive of how that can be taken care of is by the establishment of a walking blood bank. I should like to get Dr. Blair's reaction to that.

MR. MCBURNEY: What is this walking blood bank, Dr. Blair?

DR. BLAIR: It is simply a population going about its usual peacetime pursuits, each one of which has previously been blood typed, and he is informed of his blood type and carries a record of it. Then upon the need for blood for himself, his blood type would be available and blood could be given to him in a very few minutes to replace blood lost, and in that way probably save the more severely injured and assure them of recovery. If the blood type is not known and laboratory technicians must determine the blood type, a great deal of time is lost, in many instances enough to permit the death of this individual or place him in great jeopardy.

Blood Bank

DR. IVY: This walking blood bank idea is also of value in peacetime medicine. For example, we have many automobile accidents, and they occur on holidays and Sundays when the hospital laboratories are understaffed as a general rule. Every now and then a situation occurs when a person who has been injured in an automobile accident is brought to the hospital and an hour or maybe two hours elapses before the patient has been blood typed because they have to get the technicians to come to the laboratories to do this. If they had their blood type on identification tags or tattooed on their skin some place, this could be observed and the blood—taken from the static blood bank in the hospital—immediately given. In that way lives which are now lost would be saved.

DR. BLAIR: There are less than 76,000 pints of blood available in the blood banks on any one day in the United States.

DR. IVY: And the hospital blood bank group in the city of Chicago has now decided to increase the capacity of its blood bank by 100 per cent. But that will not take care of the blood that is needed in the case of an atomic attack because it represents only about 10 per cent of the amount that will be actually needed.

MR. MCBURNEY: Now, Dr. Blair, precisely what ought a person do in the event of an A-bomb attack? Let us say he has had a 30 or 40 minute alert. What advice would you give to him?

'Seek Cover'

DR. BLAIR: I think he should seek cover in a sub-basement or the cellar of his own home, or behind as much earth or building material as he can, and stay under cover until the dust fall-out has occurred and until the radioactive rain has fallen.

MR. MCBURNEY: Do you think he ought to make any effort to get out of town if he has a warning?

MR. DREISKE: No, no, that is the last thing he ought to try to do. Let him, as Dr. Ivy has said, let him get inside and stay inside and keep close to a wall with his face to that wall—the strongest part of the structure he may be in—and be prepared for flying glass and all sorts of things flying around at tremendous speed.

COLONEL TENCH: We must emphasize that point about avoiding panics because there will be many alerts, there will be dozens of alerts in wartime.

MR. MCBURNEY: Do you think we ought to provide shelters of one kind or another, Dreiske?

MR. DREISKE: I think so. I think the building of individual shelters, that is shelters for this type of bombing, is inexpensive. It is simple. And I know that it is part of our plan to recommend the construction of shelters by homes.

MR. MCBURNEY: Gentlemen, this discussion has presented, I think, a pretty grim picture. As one of you, I believe Dr. Ivy, has put it earlier, we can hope for the best, but we had better prepare for the worst.

ANNOUNCER: Thank you, gentlemen.

Suggested Readings

Compiled by M. Helen Perkins, Assistant, Reference Department, Deering Library, Northwestern University

Civil Defense against Atomic Warfare. U. S. President, National Security Resources Board. Washington, D. C., Gov't. Print. Office, 1950.

Selected, classified reading list including such topics as: radiation protection, biological and medical effects of radiation, shielding against radiation effects, etc.

The Effects of Atomic Weapons. U. S. Atomic Energy Commission. Washington, D. C., U. S. Gov't. Print. Office, 1950.

Prepared for and in cooperation with the U. S. Department of Defense and the U. S. Atomic Energy Commission, this manual gives both the effects of an atomic blast and specific directions for defense against it.

HAGEDORN, HERMANN. *The Bomb That Fell on America.* New York, Association Press, 1948.

"Choose ye this day! Life or death? Choose, America!" What happened to America's soul with the bomb dropped at Hiroshima?

LAPP, RALPH EUGENE. *Must We Hide?* Cambridge, Mass., Addison-Wesley Press, 1949.

Assembles the facts on the effect of atomic blasts, looks into problems of atomic warfare and discusses defense measures.

LAPP, R. E. and ANDREWS, H. L. *Nuclear Radiation Physics.* New York. Prentice-Hall, 1948.

Chapter 18, "Health Physics," deals with the effects of radiation on living tissue and methods of protection.

A Study of Civil Defense. National Military Establishment, Office of the Secretary of Defense. Washington, D. C., Gov't. Print. Office, 1948.

A twenty-four page pamphlet discussing the civilian defense of World War II and urging planning for a possible atomic attack.

"We Are Not Helpless"; How We Can Defend Ourselves Against Atomic Weapons. New York, The New York Times, 1950.

A forty-seven page pamphlet incorporating a series of non-technical articles on defense against an atomic blast reprinted from the *New York Times.*

What to Do in Atomic Attack. Armed Forces Talk 276, U. S. War Dept. Office of the Secretary of Defense, Washington, D. C., U. S. Gov't. Print. Office, 1949.

Lists specific actions to be followed in an atomic attack as this talk was distributed for the use of commanders in informing their personnel.

American Journal of Public Health. 39:969-973, Aug. '49. "Psychological Factors in Atomic Warfare." J. P. Cooney.

Discusses the effect of radiation and points out that fire-fighting equipment and organized rescue squads are more important than Geiger counters for civilians.

Atomic Scientists of Chicago. *Bulletin* 4:49-54, Feb. '48. "Atomic Bomb Explosions—Effects on an American City." R. E. Lapp.

A scientist on the staff of the United States National Military Establishment comments on the effect of a blast, radiation, and the mobilization of relief forces.

Business Week p. 72, July 22, '50. "Seattle Has Dry Run of Atomic Warfare."

Short article listing some of the problems discovered by the Seattle city officials after the mock A-bomb experiment carried out in July.

Collier's 126:16, Aug. 5, '50. "Hiroshima, U. S. A. Something *Can* Be Done About It."

What England has done in the past three years to prepare for civilian defense in the event of an A-bomb attack.

Illustrated London News 215:844-5, Dec. 3, '49. "How Potential Instructors Are Trained Under Realistic Conditions for an Atomic War at a Home Office Civil Defense Training School."

Includes diagrammatic drawings by G. H. Davis.

Saturday Evening Post 222:23, Jan. 7, '50. "How You Can Survive an A-bomb Blast." R. Gerstell.

Specific action to be taken by the civilian population.

Science News Letter 56:28, July 9, '49. "Cut Atomic Casualties."

Short discussion of what an atomic blast can do to prepared and unprepared cities, and the type of planning needed.

U. S. News 26:11-13, Apr. 29. "The Truth About Atomic Bombs and Defense Against Them."

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